Peter
Turn

CRF Errors Corrected by the STIC Systems Branch

ENTERED

Serial Number: 09/441,966

CRF Processing Date: 6/26/2001
Edited by:
Verified by: (1600/2900 staff)

#10
MB
06/23/61

- [ ] Changed a file from non-ASCII to ASCII

- [ ] Changed the margins in cases where the sequence text was "wrapped" down to the next line.

- [ ] Edited a format error in the Current Application Data section, specifically: _____

- [ ] Edited the Current Application Data section with the actual current number. The number inputted by the applicant was [ ] the prior application data; or [ ] other _____.

- [ ] Added the mandatory heading and subheadings for "Current Application Data".

- [ ] Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.

- [ ] Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____

- [ ] Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____

- [ ] Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____

- [ ] Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.

- [ ] Inserted colons after headings/subheadings. Headings edited included: _____

- [ ] Deleted extra, invalid, headings used by an applicant, specifically: _____

- [ ] Deleted: [ ] non-ASCII "garbage" at the beginning/end of files; [ ] secretary initials/filename at end of file; [ ] page numbers throughout text; [ ] other invalid text, such as _____.

- [ ] Inserted mandatory headings, specifically: _____

- [ ] Corrected an obvious error in the response, specifically: _____

- [ ] Edited identifiers where upper case is used but lower case is required, or vice versa.

- [ ] Corrected an error in the Number of Sequences field, specifically: _____

- [ ] A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.

- [ ] Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____

- [✓] Other: _inserted hard return before <130>_ _____

_____

_____

*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95

RAW SEQUENCE LISTING   DATE: 05/29/2001
PATENT APPLICATION: **US/09/441,966**   TIME: 17:20:15

Input Set : **A:\Pto.amc**
Output Set: **C:\CRF3\05292001\I441966.raw**

```
 2 <110> APPLICANT: Hall, Roderick L
 3        Poll, Christopher T.
 4        Newton, Benjamin B.
 5        Taylor, William J.A.
 7 <120> TITLE OF INVENTION: A Method for Accelerating the Rate of Mucociliary Clearance
 9 <130> FILE REFERENCE: 98,736-A
11 <140> CURRENT APPLICATION NUMBER: 09/441,966
12 <141> CURRENT FILING DATE: 1999-11-17
14 <150> PRIOR APPLICATION NUMBER: 09/218,913
15 <151> PRIOR FILING DATE: 1998-12-22
17 <160> NUMBER OF SEQ ID NOS: 71
19 <170> SOFTWARE: Microsoft Word 97
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 179
23 <212> TYPE: PRT
24 <213> ORGANISM: Homo sapien
26 <400> SEQUENCE: 1
27 Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val
28 1               5                   10                  15
30 Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr
31              20                  25                  30
33 Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser
34              35                  40                  45
36 Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
37          50                  55                  60
39 Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp
40 65                  70                  75                  80
42 Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp His Ser
43              85                  90                  95
45 Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr
46              100                 105                 110
48 Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg
49          115                 120                 125
51 Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn
52      130                 135                 140
54 Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg Gln Gln
55 145                 150                 155                 160
57 Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu Ala Gly
58              165                 170                 175
60 Ala Val Ser
63 <210> SEQ ID NO: 2
64 <211> LENGTH: 197
65 <212> TYPE: PRT
66 <213> ORGANISM: Homo sapien
68 <220> FEATURE:
69 <221> NAME/KEY: sig_peptide
70 <222> LOCATION: 1..18
```

RAW SEQUENCE LISTING
PATENT APPLICATION: **US/09/441,966**

DATE: 05/29/2001
TIME: 17:20:15

Input Set : **A:\Pto.amc**
Output Set: **C:\CRF3\05292001\I441966.raw**

```
72 <400> SEQUENCE: 2
73 Ala Gly Ser Phe Leu Ala Trp Leu Gly Ser Leu Leu Leu Ser Gly Val
74 1               5                   10                  15
76 Leu Ala Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser
77              20                  25                  30
79 Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn
80              35                  40                  45
82 Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly
83         50                  55                  60
85 Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala
86 65                  70                  75                  80
88 Thr Val Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala
89              85                  90                  95
91 Ala Asp Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp
92             100                 105                 110
94 His Ser Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala
95             115                 120                 125
97 Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val
98         130                 135                 140
100 Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn
101 145                 150                 155                 160
103 Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg
104                 165                 170                 175
106 Gln Gln Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu
107             180                 185                 190
109 Ala Gly Ala Val Ser
110         195
112 <210> SEQ ID NO: 3
113 <211> LENGTH: 153
114 <212> TYPE: PRT
115 <213> ORGANISM: Homo sapien
117 <400> SEQUENCE: 3
118 Ile His Asp Phe Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg Ala
119 1               5                   10                  15
121 Ser Met Pro Arg Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu
122              20                  25                  30
124 Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys
125              35                  40                  45
127 Glu Glu Cys Leu Lys Lys Cys Ala Thr Val Thr Glu Asn Ala Thr Gly
128         50                  55                  60
130 Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp Ser Ser Val Pro Ser Ala
131 65                  70                  75                  80
133 Pro Arg Arg Gln Asp Ser Glu Asp His Ser Ser Asp Met Phe Asn Tyr
134              85                  90                  95
136 Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala Ser
137             100                 105                 110
139 Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn Phe
140             115                 120                 125
142 Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu Glu
```

```
143     130                  135                 140
145 Ala Cys Met Leu Arg Cys Phe Arg Gln
146 145               150
148 <210> SEQ ID NO: 4
149 <211> LENGTH: 58
150 <212> TYPE: PRT
151 <213> ORGANISM: Homo sapien
153 <400> SEQUENCE: 4
154 Ile His Asp Phe Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg Ala
155 1               5                   10                  15
157 Ser Met Pro Arg Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu
158             20                  25                  30
160 Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys
161         35                  40                  45
163 Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
164     50                  55
166 <210> SEQ ID NO: 5
167 <211> LENGTH: 51
168 <212> TYPE: PRT
169 <213> ORGANISM: Homo sapien
171 <400> SEQUENCE: 5
172 Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro Arg
173 1               5                   10                  15
175 Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly
176             20                  25                  30
178 Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu
179         35                  40                  45
181 Lys Lys Cys
182     50
184 <210> SEQ ID NO: 6
185 <211> LENGTH: 58
186 <212> TYPE: PRT
187 <213> ORGANISM: Homo sapien
189 <400> SEQUENCE: 6
190 Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala
191 1               5                   10                  15
193 Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn
194             20                  25                  30
196 Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu
197         35                  40                  45
199 Glu Ala Cys Met Leu Arg Cys Phe Arg Gln
200     50                  55
202 <210> SEQ ID NO: 7
203 <211> LENGTH: 51
204 <212> TYPE: PRT
205 <213> ORGANISM: Homo sapien
207 <400> SEQUENCE: 7
208 Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg
209 1               5                   10                  15
```

```
211 Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly
212             20              25              30
214 Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met
215         35              40              45
217 Leu Arg Cys
218     50
220 <210> SEQ ID NO: 8
221 <211> LENGTH: 92
222 <212> TYPE: PRT
223 <213> ORGANISM: Homo sapien
225 <400> SEQUENCE: 8
226 Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val
227 1           5               10              15
229 Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr
230         20              25              30
232 Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser
233         35              40              45
235 Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
236     50              55              60
238 Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp
239 65              70              75              80
241 Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser
242             85              90
244 <210> SEQ ID NO: 9
245 <211> LENGTH: 708
246 <212> TYPE: DNA
247 <213> ORGANISM: Homo sapien
249 <220> FEATURE:
250 <221> NAME/KEY: misc_feature
251 <222> LOCATION: 679..708
252 <223> OTHER INFORMATION: /note= "n at positions 622, 679, 707 is any nucleic acid"
254 <400> SEQUENCE: 9
255 ggccgggtcg tttctcgcct ggctgggatc gctgctcctc tctgggtcc  tggcggccga        60
257 ccgagaacgc agcatccacg acttctgcct ggtgtcgaag gtggtgggca gatgccgggc       120
259 ctccatgcct aggtggtggt acaatgtcac tgacggatcc tgccagctgt ttgtgtatgg       180
261 gggctgtgac ggaaacagca ataattacct gaccaaggag gagtgcctca agaaatgtgc       240
263 cactgtcaca gagaatgcca cgggtgacct ggccaccagc aggaatgcag cggattcctc       300
265 tgtcccaagt gctcccagaa ggcaggattc tgaagaccac tccagcgata tgttcaacta       360
267 tgaagaatac tgcaccgcca acgcagtcac tgggccttgc cgtgcatcct tcccacgctg       420
269 gtactttgac gtggagagga actcctgcaa taacttcatc tatggaggct gccggggcaa       480
271 taagaacagc taccgctctg aggaggcctg catgctccgc tgcttccgcc agcaggagaa       540
273 tcctcccctg ccccttggct caaaggtggt ggttctggcc ggggctgttt cgtgatggtg       600
```
W--> 275 `ttgatccttt tcctggggag cntccatggt cttactgatt ccgggtggca aggaggaacc       660`
W--> 277 `aggagcgtgc cctgcgganc gtctggagct tcggagatga caagggnt                    708`
```
279 <210> SEQ ID NO: 10
280 <211> LENGTH: 235
281 <212> TYPE: PRT
282 <213> ORGANISM: Homo sapien
284 <220> FEATURE:
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RAW SEQUENCE LISTING   DATE: 05/29/2001
PATENT APPLICATION: US/09/441,966   TIME: 17:20:16

Input Set : A:\Pto.amc
Output Set: C:\CRF3\05292001\I441966.raw

```
285 <221> NAME/KEY: peptide
286 <222> LOCATION: 1..235
287 <223> OTHER INFORMATION: /note= "Xaa at positions 198, 201, 226, and 233 are unknown
288       amino acids"
290 <400> SEQUENCE: 10
291 Ala Gly Ser Phe Leu Ala Trp Leu Gly Ser Leu Leu Leu Ser Gly Val
292 1               5                  10                  15
294 Leu Ala Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser
295             20                  25                  30
297 Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn
298         35                  40                  45
300 Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly
301     50                  55                  60
303 Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala
304 65                  70                  75                  80
306 Thr Val Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala
307                 85                  90                  95
309 Ala Asp Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp
310             100                 105                 110
312 His Ser Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala
313             115                 120                 125
315 Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val
316     130                 135                 140
318 Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn
319 145                 150                 155                 160
321 Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg
322             165                 170                 175
324 Gln Gln Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu
325             180                 185                 190
327 Ala Gly Ala Val Ser Xaa Trp Cys Xaa Ser Phe Ser Trp Gly Ala Ser
328             195                 200                 205
330 Met Val Leu Leu Ile Pro Gly Gly Lys Glu Glu Pro Gly Ala Cys Pro
331     210                 215                 220
333 Ala Xaa Arg Leu Glu Leu Arg Arg Xaa Gln Gly
334 225                 230                 235
336 <210> SEQ ID NO: 11
337 <211> LENGTH: 179
338 <212> TYPE: PRT
339 <213> ORGANISM: Homo sapien
341 <220> FEATURE:
342 <221> NAME/KEY: peptide
343 <222> LOCATION: 1..170
344 <223> OTHER INFORMATION: /note= "Xaa at positions 8, 17, 19, 21-26, 40, 42, 45-47,
52, 64,
345         103, 112, 114, 116-121, 135, 137, 140-142, 147, and 159 is any
346         amino acid residue"
348 <400> SEQUENCE: 11
349 Ala Asp Arg Glu Arg Ser Ile Xaa Asp Phe Cys Leu Val Ser Lys Val
350 1               5                  10                  15
352 Xaa Gly Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Trp Trp Tyr Asn Val Thr
```

W--> markers appear at lines 327, 333, 349, 352.

Pleas Note:
Use of n and/ r Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing t ensure that a corresponding explanation is presented in the <220> to
<223> fields f each sequence which presents at least ne n or Xaa.

VERIFICATION SUMMARY
PATENT APPLICATION: **US/09/441,966**

DATE: 05/29/2001
TIME: 17:20:17

Input Set : **A:\Pto.amc**
Output Set: **C:\CRF3\05292001\I441966.raw**

```
L:275  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:9
L:277  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:9
L:327  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:10
L:333  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:10
L:349  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:11
L:352  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:11
L:355  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:11
L:358  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:11
L:367  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:11
L:370  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:11
L:373  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:11
L:376  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:11
L:422  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:12
L:430  M:257 W:  Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:13
L:459  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:13
L:462  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:13
L:465  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:13
L:493  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:14
L:495  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:14
L:508  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:15
L:511  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:15
L:532  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:15
L:535  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:15
L:538  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:15
L:552  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:16
L:566  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:16
L:579  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:17
L:589  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:17
L:591  M:341 W:  (46) "n" or "Xaa" used, for SEQ ID#:17
L:601  M:257 W:  Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:18
L:995  M:257 W:  Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:45
L:1102 M:257 W:  Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:47
L:1209 M:257 W:  Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:49
```

1652

RAW SEQUENCE LISTING   DATE: 05/16/2001
PATENT APPLICATION: US/09/441,966   TIME: 09:48:29

Input Set : A:\98,736-a.Seq.Lst.2nd.rev.txt
Output Set: N:\CRF3\05162001\I441966.raw

Does Not Comply
Corrected Diskette Needed

```
     3 <110> APPLICANT: Hall, Roderick L
     4         Poll, Christopher T.
     5         Newton, Benjamin B.
     6         Taylor, William J.A.
     8 <120> TITLE OF INVENTION: A Method for Accelerating the Rate of Mucociliary Clearance<130>
98,736-A
W--> 0 <130> FILE REFERENCE:
    10 <140> CURRENT APPLICATION NUMBER: 09/441,966
    11 <141> CURRENT FILING DATE: 1999-11-17
    13 <150> PRIOR APPLICATION NUMBER: 09/218,913
    14 <151> PRIOR FILING DATE: 1998-12-22
    16 <160> NUMBER OF SEQ ID NOS: 71
    18 <170> SOFTWARE: Microsoft Word 97
    20 <210> SEQ ID NO: 1
    21 <211> LENGTH: 179
    22 <212> TYPE: PRT
    23 <213> ORGANISM: Homo sapien
    25 <400> SEQUENCE: 1
    26 Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val
    27 1               5                   10                  15
    29 Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr
    30             20                  25                  30
    32 Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser
    33             35                  40                  45
    35 Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
    36         50                  55                  60
    38 Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp
    39 65                  70                  75                  80
    41 Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp His Ser
    42             85                  90                  95
    44 Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr
    45             100                 105                 110
    47 Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg
    48         115                 120                 125
    50 Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn
    51         130                 135                 140
    53 Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg Gln Gln
    54 145                 150                 155                 160
    56 Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu Ala Gly
    57             165                 170                 175
    59 Ala Val Ser
    62 <210> SEQ ID NO: 2
    63 <211> LENGTH: 197
    64 <212> TYPE: PRT
    65 <213> ORGANISM: Homo sapien
    67 <220> FEATURE:
    68 <221> NAME/KEY: sig_peptide
    69 <222> LOCATION: 1..18
```

```
              RAW SEQUENCE LISTING              DATE: 05/16/2001
              PATENT APPLICATION:  US/09/441,966    TIME: 09:48:29

              Input Set : A:\98,736-a.Seq.Lst.2nd.rev.txt
              Output Set: N:\CRF3\05162001\I441966.raw

 71 <400> SEQUENCE: 2
 72 Ala Gly Ser Phe Leu Ala Trp Leu Gly Ser Leu Leu Leu Ser Gly Val
 73 1               5                  10                  15
 75 Leu Ala Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser
 76             20                  25                  30
 78 Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn
 79          35                  40                  45
 81 Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly
 82       50                  55                  60
 84 Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala
 85 65                  70                  75                  80
 87 Thr Val Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala
 88             85                  90                  95
 90 Ala Asp Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp
 91             100                 105                 110
 93 His Ser Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala
 94          115                 120                 125
 96 Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val
 97       130                 135                 140
 99 Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn
100 145                 150                 155                 160
102 Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg
103                 165                 170                 175
105 Gln Gln Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu
106             180                 185                 190
108 Ala Gly Ala Val Ser
109          195
111 <210> SEQ ID NO: 3
112 <211> LENGTH: 153
113 <212> TYPE: PRT
114 <213> ORGANISM: Homo sapien
116 <400> SEQUENCE: 3
117 Ile His Asp Phe Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg Ala
118 1               5                  10                  15
120 Ser Met Pro Arg Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu
121             20                  25                  30
123 Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys
124          35                  40                  45
126 Glu Glu Cys Leu Lys Lys Cys Ala Thr Val Thr Glu Asn Ala Thr Gly
127       50                  55                  60
129 Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp Ser Ser Val Pro Ser Ala
130 65                  70                  75                  80
132 Pro Arg Arg Gln Asp Ser Glu Asp His Ser Ser Asp Met Phe Asn Tyr
133             85                  90                  95
135 Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala Ser
136             100                 105                 110
138 Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn Phe
139          115                 120                 125
141 Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu Glu
```

Input Set : A:\98,736-a.Seq.Lst.2nd.rev.txt
Output Set: N:\CRF3\05162001\I441966.raw

```
142     130               135               140
144 Ala Cys Met Leu Arg Cys Phe Arg Gln
145 145               150
147 <210> SEQ ID NO: 4
148 <211> LENGTH: 58
149 <212> TYPE: PRT
150 <213> ORGANISM: Homo sapien
152 <400> SEQUENCE: 4
153 Ile His Asp Phe Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg Ala
154 1               5               10               15
156 Ser Met Pro Arg Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu
157               20               25               30
159 Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys
160               35               40               45
162 Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
163     50               55
165 <210> SEQ ID NO: 5
166 <211> LENGTH: 51
167 <212> TYPE: PRT
168 <213> ORGANISM: Homo sapien
170 <400> SEQUENCE: 5
171 Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro Arg
172 1               5               10               15
174 Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly
175               20               25               30
177 Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu
178               35               40               45
180 Lys Lys Cys.
181     50
183 <210> SEQ ID NO: 6
184 <211> LENGTH: 58
185 <212> TYPE: PRT
186 <213> ORGANISM: Homo sapien
188 <400> SEQUENCE: 6
189 Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala
190 1               5               10               15
192 Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn
193               20               25               30
195 Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu
196               35               40               45
198 Glu Ala Cys Met Leu Arg Cys Phe Arg Gln
199     50               55
201 <210> SEQ ID NO: 7
202 <211> LENGTH: 51
203 <212> TYPE: PRT
204 <213> ORGANISM: Homo sapien
206 <400> SEQUENCE: 7
207 Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg
208 1               5               10               15
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RAW SEQUENCE LISTING   DATE: 05/16/2001
PATENT APPLICATION: US/09/441,966   TIME: 09:48:29

        Input Set : A:\98,736-a.Seq.Lst.2nd.rev.txt
        Output Set: N:\CRF3\05162001\I441966.raw

```
210 Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly
211             20                  25                  30
213 Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met
214         35                  40                  45
216 Leu Arg Cys
217     50
219 <210> SEQ ID NO: 8
220 <211> LENGTH: 92
221 <212> TYPE: PRT
222 <213> ORGANISM: Homo sapien
224 <400> SEQUENCE: 8
225 Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val
226 1               5                  10                  15
228 Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr
229         20                  25                  30
231 Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser
232         35                  40                  45
234 Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val
235     50                  55                  60
237 Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp
238 65                  70                  75                  80
240 Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser
241                 85                  90
243 <210> SEQ ID NO: 9
244 <211> LENGTH: 708
245 <212> TYPE: DNA
246 <213> ORGANISM: Homo sapien
248 <220> FEATURE:
249 <221> NAME/KEY: misc_feature
250 <222> LOCATION: 679..708
251 <223> OTHER INFORMATION: /note= "n at positions 622, 679, 707 is any nucleic acid"
253 <400> SEQUENCE: 9
254 ggccgggtcg tttctcgcct ggctgggatc gctgctcctc tctggggtcc tggcggccga    60
256 ccgagaacgc agcatccacg acttctgcct ggtgtcgaag gtggtgggca gatgccgggc   120
258 ctccatgcct aggtggtggt acaatgtcac tgacggatcc tgccagctgt ttgtgtatgg   180
260 gggctgtgac ggaaacagca ataattacct gaccaaggag gagtgcctca agaaatgtgc   240
262 cactgtcaca gagaatgcca cgggtgacct ggccaccagc aggaatgcag cggattcctc   300
264 tgtcccaagt gctcccagaa ggcaggattc tgaagaccac tccagcgata tgttcaacta   360
266 tgaagaatac tgcaccgcca acgcagtcac tgggccttgc cgtgcatcct cccacgctg    420
268 gtactttgac gtggagagga actcctgcaa taacttcatc tatgaggct gccgggggcaa   480
270 taagaacagc taccgctctg aggaggcctg catgctccgc tgcttccgcc agcaggagaa   540
272 tcctcccctg ccccttggct caaaggtggt ggttctggcc ggggctgttt cgtgatggtg   600
```
W--> 274 ttgatccttt tcctgggggag cntccatggt cttactgatt ccgggtggca aggaggaacc   660
W--> 276 aggagcgtgc cctgcgganc gtctggagct tcggagatga caagggnt   708
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278 <210> SEQ ID NO: 10
279 <211> LENGTH: 235
280 <212> TYPE: PRT
281 <213> ORGANISM: Homo sapien
283 <220> FEATURE:
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                    RAW SEQUENCE LISTING              DATE: 05/16/2001
                    PATENT APPLICATION:  US/09/441,966   TIME: 09:48:29

                    Input Set : A:\98,736-a.Seq.Lst.2nd.rev.txt
                    Output Set: N:\CRF3\05162001\I441966.raw

    284 <221> NAME/KEY: peptide
    285 <222> LOCATION: 1..235
    286 <223> OTHER INFORMATION: /note= "Xaa at positions 198, 201, 226, and 233 are unknown
    287      amino acids"
    289 <400> SEQUENCE: 10
    290 Ala Gly Ser Phe Leu Ala Trp Leu Gly Ser Leu Leu Leu Ser Gly Val
    291 1               5                   10                  15
    293 Leu Ala Ala Asp Arg Glu Arg Ser Ile His Asp Phe Cys Leu Val Ser
    294             20                  25                  30
    296 Lys Val Val Gly Arg Cys Arg Ala Ser Met Pro Arg Trp Trp Tyr Asn
    297         35                  40                  45
    299 Val Thr Asp Gly Ser Cys Gln Leu Phe Val Tyr Gly Gly Cys Asp Gly
    300     50                  55                  60
    302 Asn Ser Asn Asn Tyr Leu Thr Lys Glu Glu Cys Leu Lys Lys Cys Ala
    303 65                  70                  75                  80
    305 Thr Val Thr Glu Asn Ala Thr Gly Asp Leu Ala Thr Ser Arg Asn Ala
    306             85                  90                  95
    308 Ala Asp Ser Ser Val Pro Ser Ala Pro Arg Arg Gln Asp Ser Glu Asp
    309             100                 105                 110
    311 His Ser Ser Asp Met Phe Asn Tyr Glu Glu Tyr Cys Thr Ala Asn Ala
    312         115                 120                 125
    314 Val Thr Gly Pro Cys Arg Ala Ser Phe Pro Arg Trp Tyr Phe Asp Val
    315     130                 135                 140
    317 Glu Arg Asn Ser Cys Asn Asn Phe Ile Tyr Gly Gly Cys Arg Gly Asn
    318 145                 150                 155                 160
    320 Lys Asn Ser Tyr Arg Ser Glu Glu Ala Cys Met Leu Arg Cys Phe Arg
    321             165                 170                 175
    323 Gln Gln Glu Asn Pro Pro Leu Pro Leu Gly Ser Lys Val Val Val Leu
    324             180         /       185/                190
W--> 326 Ala Gly Ala Val Ser Xaa Trp Cys Xaa Ser Phe Ser Trp Gly Ala Ser
    327         195                 200                 205
    329 Met Val Leu Leu Ile Pro Gly Gly Lys Glu Glu Pro Gly Ala Cys Pro
    330     210                 215                 220
W--> 332 Ala Xaa Arg Leu Glu Leu Arg Arg Xaa Gln Gly
    333 225                 230                 235
    335 <210> SEQ ID NO: 11
    336 <211> LENGTH: 179
    337 <212> TYPE: PRT
    338 <213> ORGANISM: Homo sapien
    340 <220> FEATURE:
    341 <221> NAME/KEY: peptide
    342 <222> LOCATION: 1..170
    343 <223> OTHER INFORMATION: /note= "Xaa at positions 8, 17, 19, 21-26, 40, 42, 45-47, 52, 64,
    344      103, 112, 114, 116-121, 135, 137, 140-142, 147, and 159 is any
    345      amino acid residue"
    347 <400> SEQUENCE: 11
W--> 348 Ala Asp Arg Glu Arg Ser Ile Xaa Asp Phe Cys Leu Val Ser Lys Val
    349 1           5               10                  15
W--> 351 Xaa Gly Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Trp Trp Tyr Asn Val Thr
```

```
                VERIFICATION SUMMARY              DATE: 05/16/2001
                PATENT APPLICATION:  US/09/441,966   TIME: 09:48:30

                Input Set : A:\98,736-a.Seq.Lst.2nd.rev.txt
                Output Set: N:\CRF3\05162001\I441966.raw

L:0 M:201 W: Mandatory field data missing, FILE REFERENCE
L:274 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:276 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:326 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:332 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:348 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:351 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:354 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:357 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:366 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:369 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:372 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:375 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:421 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:429 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:13
L:458 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:461 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:464 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:492 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:494 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:507 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:510 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:531 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:534 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:537 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:551 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:565 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:578 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:588 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:590 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:600 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:18
L:994 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:45
L:1101 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:47
L:1208 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:49
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